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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/628,922	07/31/2000	Manfred Hahl	4648 US	5000

7590 05/27/2004

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EXAMINER	
NGUYEN, JENNIFER T	

ART UNIT	PAPER NUMBER
2674	18

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/628,922	HAHL, MANFRED	
	Examiner	Art Unit	
	Jennifer T Nguyen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2000*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 7-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,15,18 and 19* is/are allowed.

6)☒ Claim(s) *1-3,5,7-14,16,17,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is responsive to amendment filed on 03/12/2004.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 7, 10, 12-14, 16, 17, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deter (U.S. Patent No. 5,864,432), Kuwayama et al. (U.S. Patent No. 6,504,518) in view of Yamamura et al. (U.S. Patent No. 5,013,135) and further in view of Kawakami et al. (Pub. No.: US 2001/0001241).

Regarding claims 1 and 16, referring to Figs. 1, 3 and 5, Deter teaches a color head-up display, in particular for vehicles, in which the light from a light source (13) is transmitted through an at least partially light transmitting display (6) and is projectable onto a windshield (9), wherein a multiplicity of red, a blue and green light emitting diode are arranged without packing on a common support (from col. 11, line 37 to col. 12, line 36).

Deter differs from claims 1 and 16 in that he does not specifically teach a multiplicity of red, a multiplicity blue and a multiplicity green light emitting diode, a heat-dissipating device for cooling the light-emitting diodes is present, and the individual light-emitting diodes are chip pads fitted on a metallic support material array. However, referring to Figs. 1-3 and 11, Kuwayama teaches a multiplicity of red, a multiplicity blue and a multiplicity green light emitting diode (from col. 5, line 55 to col. 6, line 13 and from col. 11, line 49 to col. 12, line 35) and referring to

Fig. 1, Yamamura teaches a heat-dissipating device (15) for cooling the light-emitting diode (1) (col. 3, lines 40-59) and referring to Fig. 5B, Kawakami teaches the individual light-emitting diodes 200G, 200R, 200B) are chip pads fitted on a metallic support material array (212G, 212R, 212B) [0042]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the multiplicity of red, the multiplicity blue and the multiplicity green light emitting diode as taught by Kuwayama, the heat-dissipating device for cooling the light-emitting diode as taught by Yamamura and the individual light-emitting diodes are chip pads fitted on a metallic support material array as taught by Kawakami in the system of Deter in order to protect the light emitting diodes and to realize a simple series circuit of plurality of light-emitting diodes if the diodes which are simultaneously adjacent to the support material arrays are electrically insulated from one another.

Regarding claims 2 and 3, referring to Fig. 5, Deter further teaches multiplicity of light emitting diodes is arranged in the form of a compact array in that the compact array is configured in the form of a matrix (col. 12, lines 4-23).

Regarding claim 7, the combination of Deter, Kuwayama , Yamamura, and Kawakami teaches at least one bonding wire (206G, 206R, 206B) is connected to said chip pad and to the support material array (212G, 212R, 212B) (Fig. 5B of Kawakami).

Regarding claim 10, Deter further teaches the color head-up display wherein the at least partially light-transmitting display (6) is a liquid crystal display (col. 11, lines 40-41).

Regarding claim 12, The combination of Deter, Kuwayama , Yamamura, and Kawakami teaches the liquid crystal display is a monochrome liquid crystal display and wherein the

individual color of the light emitting diodes can be successively switched on and off in a rapid sequence (from col. 11, line 34 to col. 12, line 35 of Kuwayama).

Regarding claim 13, Deter further teaches the color head-up display wherein a condenser lens (5) is arranged between the light source (13) and the display (6) (Fig. 3, col. 9, lines 63-66).

Regarding claim 14, Deter also teaches that the color head-up display wherein light from the light emitting diode (13) is reflected by one or a plurality of mirrors (5, 8) and is transmitted through the display (6) (from col. 11, line 37 to col. 12, line 36).

Regarding claim 17, Deter further teaches the light emitting diodes are arranged in rows and columns on said support (col. 12, lines 4-23 of Deter).

Regarding claim 20, the combination of Deter, Kuwayama , Yamamura, and Kawakami teaches electrical connections provided to the multiplicity of red light emitting diodes, to the multiplicity blue light emitting diodes and to the multiplicity green light emitting diodes enable electrical activation of the diodes to attain a desired coloration to the display (from col. 5, line 55 to col. 6, line 13 and from col. 11, line 49 to col. 12, line 35 of Kuwayama).

Regarding claim 21, the combination of Deter, Kuwayama , Yamamura, and Kawakami teaches row of light emitting diodes of a first of said colors is interleaved with a row of light emitting diodes of a second of said colors (from col. 5, line 55 to col. 6, line 13 and from col. 11, line 49 to col. 12, line 35 of Kuwayama).

4. Claims 5, 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deter (U.S. Patent No. 5,864,432), Kuwayama et al. (U.S. Patent No. 6,504,518), Yamamura et al. (U.S. Patent No. 5,013,135) in view of Kawakami et al. (Pub. No.: US 2001/0001241) and further in view of Lys et al (U.S. Patent No. 6,211,626).

Regarding claim 5, the combination of Deter, Kuwayama, Yamamura, and Kawakami differs from claim 5 in that it does not specifically teach the compact array has a large round form. However, referring to Fig. 8, Lys teaches multiplicity of light-emitting diodes (15) is arranged in the form of a compact array, and wherein the compact array has a large round form (37) (from col. 12, line 66 to col. 13, line 5). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the compact array has a large round form as taught by Lys in the system of the combination of Deter, Kuwayama, Yamamura, and Kawakami in order to provide a simple manner in the bonding of the individual diodes and obtain the most utilized luminous intensity of the light emitting diodes when the light is transmitted through a lens optical arrangement, by this way, the material and energy are saved.

Regarding claim 8, the combination of Deter, Kuwayama, Yamamura, Kawakami and Lys further teaches a plurality of said light emitting diodes (15) are connected in series (from col. 12, line 66 to col. 13, line 5 of Lys).

Regarding claim 9, the combination of Deter, Kuwayama, Yamamura, Kawakami and Lys further teaches a plurality of said light emitting diodes (15) of one color is connected in series (from col. 12, line 66 to col. 13, line 5 of Lys).

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deter (U.S. Patent No. 5,864,432), Kuwayama et al. (U.S. Patent No. 6,504,518), Yamamura et al. (U.S. Patent No. 5,013,135) in view of Kawakami et al. (Pub. No.: US 2001/0001241) and further in view of Saito et al (Japan Pub. No.: 06-172616).

Regarding claim 11, the combination of Deter, Kuwayama, Yamamura, Kawakami differs from claim 11 in that it does not specifically teach the display is a color liquid crystal

display. However, Saito teaches the display is a color liquid crystal display (D1) ([0011]-[0017]). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the display is a color liquid crystal display as taught by Saito in the system of the combination of Deter, Kuwayama, Yamamura, Kawakami in order to enables a simple color representation.

6. Claims 4, 15, 18, and 19 are allowed.

7. Applicant's arguments with respect to claims 1-5 and 7-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jennifer T. Nguyen** whose telephone number is **703-305-3225.** The examiner can normally be reached on Mon-Fri from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Richard A Hjerpe** can be reach at **703-305-4709**.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, DC. 20231

Or faxed to: 703-872-9306 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, sixth-floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding

should be directed to the Technology Center 2600 Customer Service Office whose telephone number is 703-306-0377.

JNguyen
05/20/2004

REGINA LIANG
PRIMARY EXAMINER